Draft Prospectus

The Great Salt Lake Wetland Goals Project

Introduction

The U.S. Environmental Protection Agency seeks to become a partner within Utah's Watershed Restoration Initiative. The Initiative is sponsored by the Utah Partners for Conservation and Development (UPCD/Partnership). We propose to work with project partners to help identify community-based goals for restoring and improving the ecosystem health of wetlands within the Great Salt Lake area. Together, we can build upon the work of Utah Department of Environmental Quality and their development of a wetland monitoring system for the Great Salt Lake. Information from that system can inform the overall goal setting process. Acquired monitoring information also will provide wetland managers and restoration practitioners a way of reporting progress toward accomplishment of their goals.

The wetlands and associated habitat that surround the Great Salt Lake serve as the breeding-ground and migratory-staging area for millions of birds traveling the Pacific and Central Flyways. The valued aquatic resource is at risk of degradation and conversion to uplands because of rapid urbanization in the region and from the secondary environmental effects produced from historic mining and mineral processing activity. The careful conservation of water quality and quantity in the area is considered a key factor in the management of the perceived risk.

Fortunately, new scientific innovations in the fields of environmental monitoring, landscape analysis and computer technology make it possible for us to better track the environmental results of our conservation practices in the Great Salt Lake area. As we learn more about the effectiveness of our current management actions, we can work to establish broad-scale wetland goals to guide our future conservation activity and ventures. Explicit, science-based goals will allow project partners to leverage their resources to better protect the environment and the services it provides to our local communities.

Proposal

The EPA can contribute to Utah's Watershed Restoration Initiative by providing technical support for the implementation of two collaborative science projects. One of the collaborative projects involves working with Utah's Department of Environmental Quality and local project partners. Together we are designing a wetland monitoring system for the Great Salt Lake. The system will be used to report the quantity and ecological condition of wetlands that fringe the Great Salt Lake. The system also will be used to communicate the effectiveness of the vast array of wetland projects currently being implemented within state/federal wildlife management areas, wetland preserves and on private lands with willing cooperators (e.g., "duck clubs").

The other collaborative science project will examine how different types of wetland restoration and protection practices can be used to improve water quality, and thereby support valued waterfowl and shorebird resources. Project partners also will examine the feasibility of integrating wetland protection and restoration into a water quality trading program. A key component of the study will be the design of "scenarios" that depict the future abundance, distribution and condition of wetlands for the Great Salt Lake. We will be able to combine that environmental forecast, with information about current wetland condition, to help local communities identify their Great Salt Lake wetland goals.

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Both projects will be managed as a collaborative venture by agency staff and scientists with wetland program responsibilities in the Great Salt Lake area. Initial project facilitation is being coordinated by USEPA in cooperation with the Utah Department of Environmental Quality and the Utah Division of Wildlife Resources. Over time we will be able to report the results of our work to the UPCD/Partnership team.

Project Objectives

Collaborative project partners will produce wetland goals for the Great Salt Lake (GSL) region. The goals will be presented using maps with an accompanying set of narrative and numerical forecasts. The forecasts will identify wetlands and associated aquatic resources in need of protection and restoration. The wetland goals will be developed based on the results of a number of activities. They include:

(1) A field survey of GSL wetland condition,
(2) An analysis of wetland abundance by wetland class, and
(3) A public review of a plausible set of wetland conservation scenarios. Each scenario will include an individual forecast of future wetland condition and use.

All phases of the project will be conducted with the aid of targeted community outreach activity. We will describe for our community partners how change in wetland condition and abundance may affect the services they provide in support of aquatic life use. Special emphasis will be placed on the conservation of waterfowl and shorebird habitat.

Analytical Approach

Initial collaborative project design will be guided by a general set of landscape design and evaluation principals used in "alternative futures" projects. AAlternative Futures@ is an environmental evaluation approach that helps communities envision and understand the consequences of different land and water management actions. Lessons learned from several completed Aalternative futures@ projects will be applied to this new venture. The San Francisco Bay Area Wetland Ecosystem Goals Project (*www.sfei.org/sfbaygoals/*) and the Blackberry Creek Alternative Futures Project (*www.co.kane.il.us/kcstorm/*) are examples of an alternative futures type project. Also, careful consideration also will be given to alternative future projects completed in the Great Salt Lake area by the Bioregional Planning Program at Utah State University *(http://ella.gis.usu.edu/bioregionalplanning/publications.htm)*.

The collaborative project will be organized around three overlapping teams: (a) Landscape design, (b) evaluation and (c) community outreach.
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The teams will work together to develop production schedules and implement each of the following project tasks.

(1) Develop a wetland landscape profile of the GSL region to characterize wetland beneficial uses (functions), condition and abundance,

(2) Build and deploy a wetland monitoring program that will allow us to report: (a) Ambient wetland condition, (b) the environmental effectiveness of practices taken to attain an identified set of wetland goals and (c) nutrient criteria that is protective of wetlands.

(3) Map significant wetlands and associated aquatic systems in need of protection and

restoration (in coordination with ongoing Special Area Management Plan development),

(4) Identify areas where there is opportunity to conduct compensatory wetland mitigation and restoration in a watershed context,

(5) Identify a plausible set of conventional and conservation-based wetland management scenarios for the Great Salt Lake, and

(6) Construct and employ one or more evaluation models to forecast the consequences of those scenarios on water quality and wildlife.

Product:

Phase 1 of the project will produce a reference wetland network for GSL region, including a wetland landscape profile for the GSL wetland domain. Also, a draft rapid wetland assessment method (RAM) and a more rigorous draft assessment protocol (e.g., "index of wetland condition") will be developed for empirical testing. Phase 1 builds on an ongoing project by Utah DEQ to develop nutrient criteria for GSL wetlands.

Phase 2 of the project will involve a probability-based (random) wetland survey of GSL wetlands. Survey results will be used to report current wetland condition, relative to reference condition. The rapid assessment method, developed in Phase 1 of the project, will be tested, calibrated and published as part of this work effort.

Also, Phase 2 work will involve the production of a set of mapped wetland conservation scenarios and wetland-scale, engineering (restoration) templates for the GSL Region. The scenarios and templates will depict a range of conventional and conservation-based practices and management assumptions. Special emphasis will be directed toward evaluating the feasibility of restoring wetlands as part of a water quality trading program. Targeted wetland sampling will be completed to calibrate evaluation models that, in turn, will be used to forecast the environmental effects of the various scenarios.

Phase 3 of the project will integrate information from the previous work products to yield a proposed set of spatially explicit, wetland management goals of the Great Salt Lake. A community outreach process will be designed and implemented to review, revise and select a preferred set of wetland management goals. Progress toward attainment of those goals will be tracked using the wetland monitoring and assessment program developed in Phase 2 of the Project.

A refined list of products from the venture will be developed at a 2007 planning workshop convened by the project sponsors

.**Criteria for Evaluating Project Success**

The four criteria that will be used to evaluate project success are:

(1) Development of a workable, defensible, and transferable methodology for setting wetland conservation goals for a broad geographical area,

(2) Local community adoption of wetland goals and implementation strategy in their comprehensive plan development,

(3) Pilot testing and adoption of innovative practices to attain wetland goals, including the use of:

(a) A web-based “wetland tracker” to report the quantity and quality of restoration projects in a watershed context, including compensatory wetland mitigation,

(b) Water quality trading programs, and

(c) Allocation of new federal, state and private conservation funds for wetland preserve development and expansion.

(4) Indication of interest by communities beyond the GSL Region to apply the Wetland Goals /Alternative Futures Approach in their area.

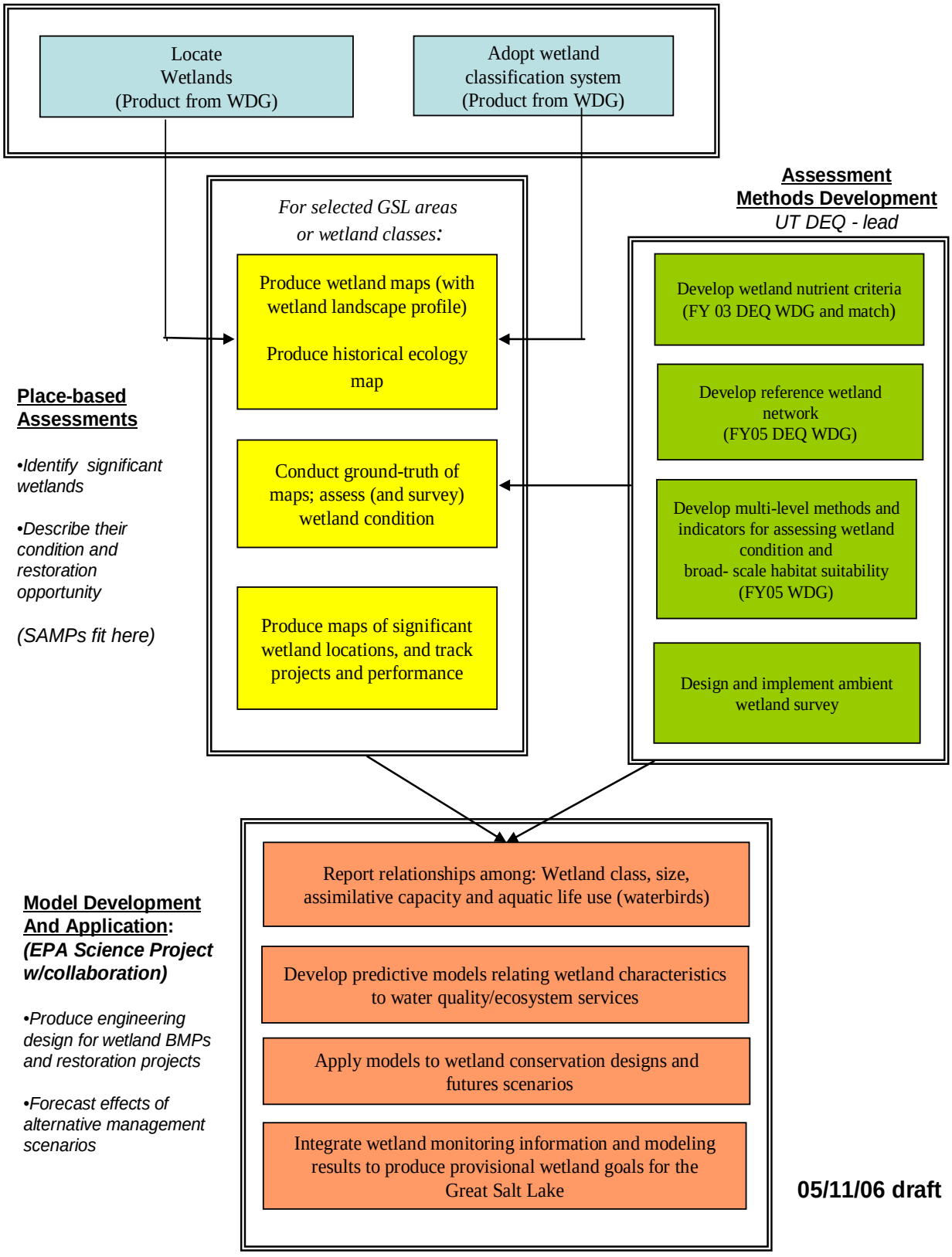
EPA Budget Contributions:

$ 10,000	FY2005-2006 (Wetland Workshops)
$ 200,000	FY2005 (Reference Wetland Network and Wetland Assessment Methods)
$ 200,000	FY2006 (Alternative futures analysis, w/emphasis on wetlands and water quality trading)
TBD	FY2007 (Ambient wetland survey)

Contacts

Walt Baker/Theron Miller, Utah Department of Environmental Quality
Mike Canning/Nancy Keate, Utah Division of Wildlife Resources
Lucy Jordan, U.S. Fish and Wildlife Service
Theron Miller, Utah Department of Environmental Quality
Jill Minter, EPA Denver
Joe Schubauer-Berigan, EPA Cincinnati
Rich Sumner, EPA Corvallis
Shawn Zinszer, Intermountain Region, Corps of Engineers (Bountiful, UT)

Working Draft
Study Framework for the
Great Salt Lake Wetland Goals Project



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